

Trem King TK-1 Retro Fit Installation Instructions

The Trem King TK-1 is designed to fit into guitars previously fitted with vintage 6 screw or two-post type vibrato system. These instructions assume that the guitar being retrofitted has a spring cavity for one of these type vibrato systems. Top routs and Spring Cavities for these types of vibratos are usually very similar. **NOTE: If building a guitar that is not yet routed for a bridge, these instructions do not cover the primary routing of the top rout and spring cavity. Those instructions are readily available on the web. However, the enclosed instructions will take you from that point through installation.**

Tools needed:

Philips screwdriver

Drill

1/16" drill bit

1/8" extended drill bit – 12 in. long

Router

Router Template (not included) – Pocket Rout template dimensions included on routing diagram. Use 4 1/4 in. by 6 in. x 1/4 in. plexiglass for template material. Drawing shows size of hole to be cut in plexiglass. Mark on template – back line, front line, center line

Router bit – 1 inch diameter straight router bit. 3/4 inch tall, 1/4 inch shaft.

5 pieces 3/8 in. washer with 1/4 inch inner diameter to fit

over shaft of router bit. Put a small amount of light grease over the shaft of the router bit before putting on washers. Washers will act as template guide.

Light Grease

Double sided tape

Soldering iron and solder

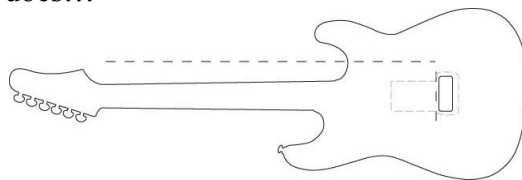
Hammer

Small punch

NOTE: Routing of the spring cavity should be done by a qualified luthier.

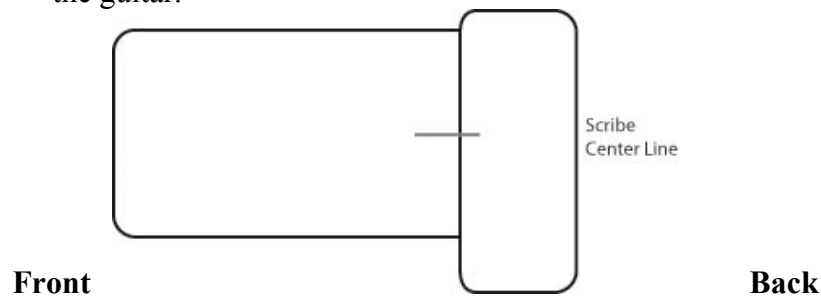
Installation:

1. Remove existing vibrato unit including all screws into the body, springs and spring claw. Plug holes on top of guitar with wood dowels. Use wood glue when inserting dowels into body. If the existing vibrato was a 6 screw type, plug the two outside holes with wood dowels. If the existing vibrato was two post style, pull the inserts out of the body and plug with wood dowels. The dowels must be even with the top of the guitar body when inserted all the way. Plug old spring claw screw holes.
2. Take Measurements – Just to be sure...
 - a. Measure the top rout for the bridge on your guitar. Top rout should be at least one (1) inch wide by three (3) inches long. Top cavities may vary from 3/4 inch to 1 inch wide by 3 to 3-1/8 inches long. The Trem King should drop right into that hole on the top of the guitar. Make sure it does!!!



View of Normal Rout on Top of Guitar

- b. Measure spring cavity on back of guitar. Rout in spring cavity should be at least 5 in. long.
- c. Measure width of Spring Cavity. Most are narrow where the springs are and are wider where the bridge comes through the body. The included routing diagram shows the typical cavity that is 2 ¼ in. at the narrow part and 3 1/32 in. at the widest part. Below is a typical rout on the back of the guitar.



NOTE: mark a center line in the middle of the 2 ¼ in. wide area of the spring cavity. This line should correspond with the natural center line of the guitar that runs from the neck through the body of your guitar. Use this to line up the Pocket Rout template. The scribed line does not have to go all the way down the cavity, only close enough to the area being routed that you can use it for alignment with the template.

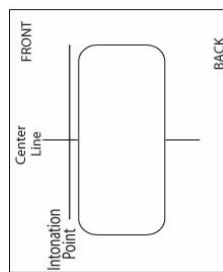
NOTE: Facing spring cavity on the back of the guitar, 'Front' and 'Back' indicate:

Front – the edge of the spring cavity closest to the neck

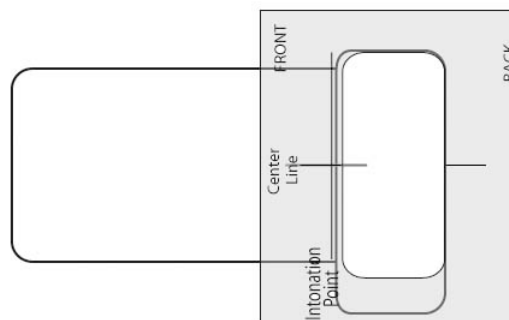
Back – The edge of the spring cavity furthest from the neck

If all is right, you are ready to Rout!

3. Place guitar body face down firmly into routing jig.
4. Put double stick tape on the back of the body around the area to be routed. Place Pocket Rout Template on back of guitar over spring cavity. The back edge (marked backline) is placed along the back edge of the spring cavity (flush). Align the center line on the template with the center line on your guitar. Be sure template is firmly seated on the guitar body and that the guitar body is firmly mounted into a jig before attempting to rout.



Pocket Rout Template



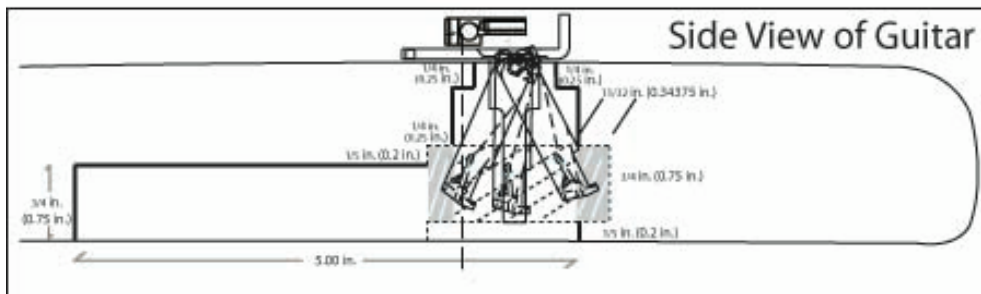
Template in Place

5. Use Router with suggested bit to rout cavity along front, back and sides of Pocket Rout template. Set depth from router base to top of router bit to ½ in.

Trick - Use two pieces of plexiglass (1/4 in. thick) placed on top of each other to set the depth for your router bit. Turn router upside down and with the plunge deck loose, use two pieces of plexiglass (now ½ in. thick) to set the depth for the bit. Tighten plunge deck.

NOTE: The depth that gets cut into the sides, back and front of the cavity varies due to the shape of the Pocket template. More is cut from the back of the cavity than the front and only one side is cut. This is planned this way.

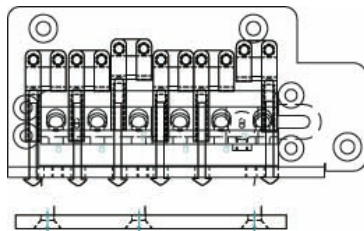
6. Remove template, any wood shavings and double stick tape.
7. Place Trem King unit into top of guitar to make sure it fits and tone block can swing both directions. Remove if all looks good.



8. Place double stick tape on top of guitar around top rout hole.
9. Remove Harness Bar from Trem King and move the 'd' and high 'e' saddles forward to approximately 1/4 to 1/3 in. from the front edge of the bridge plate. (Approximately the same place as the Trem King logo is on the bridge.) Replace harness bar so that saddles are tight. Use these two saddles to determine the intonation point.

NOTE: At this point, insert the whammy bar into the tone block (be sure to remove the protective covering from the bar), making sure it is all the way down in the hole. Use allen wrench to tighten two (2) set screws on back of tone block for whammy bar. Tighten to you preference. Also, make sure the Grip Tip is tight. Check both the rubber tip and the metal end for tightness. Remove whammy bar.

E and D saddles moved



Harness Bar removed

10. Place Trem King on guitar so that the measurement from the center of the 'd' and 'e' saddle pin to the nut is the correct scale length for your guitar.
11. Measure the distance on the low 'e' and high 'e' side from the nut to the front of the bridge plate. If it is the same, the bridge is straight.
12. Place a straight edge along the center line of the guitar down the fret board from the nut to the bridge. The center line of the Trem King is the center between the 'd' and 'g' saddles. Align with the center line of the guitar.

Measure Twice, Cut Once

13. With bridge on top of guitar and aligned properly, mark three (3) screw holes on top of guitar with punch.
14. Remove Trem King and double stick tape.
15. Use 1/16" bit to drill three (3) holes 1/2" (or less) deep for three (3) #6 woodscrews on top of guitar.

16. Turn guitar over. Drill three (3) spring claw holes $\frac{1}{2}$ - 1" deep holes using a $\frac{1}{8}$ " extended drill bit. Drill holes approximately $\frac{1}{4}$ in. from bottom of cavity. The hole in the middle should line up with the center of the spring cavity. One hole on either side for the tone block springs that should line up with the small holes in the tone block for tone block springs.
NOTE: by using this long drill bit, you get a straighter angle into the body for the spring claw screw holes.
17. Install two (2) #8 x 1 $\frac{1}{2}$ in. Button Head philips wood screws with spring claws on them. One (1) claw for the tone block spring and one (1) claw for the tension bar spring.
NOTE: If using 10 gauge or less strings, only one (1) spring claw will be mounted for the tone block spring and one spring claw for the tension bar. The tone block spring can be mounted on either the bass or treble side of the tone block. If using 11 gauge or higher strings, install two (2) spring claws for the tone block and one (1) for the tension bar.
Trick: Tighten middle screw and claw (for tension bar) almost all the way into the body. Leave the other screw with claw about $\frac{1}{2}$ in. out of body. This will make later adjustments easier.
18. Solder Ground wire to spring claw for tone block. You cannot use the middle spring claw because it does not ground.
19. Mount Trem King unit to top of guitar using three (3) #6 x 1 in. countersunk wood screws. Screws should correspond with the color of your Trem King – chrome, black, and gold.
20. Press fit tension bar spring into hole in middle of the tension bar. Make sure the spring fits snugly into the hole in the tension bar. The leather on the tension bar should be facing towards to body of the spring.
Trick: Make a small bend with pliers at the tip of the spring that goes into the tension bar. Press in for a snug fit. Make sure tension bar does not fall off easily.
21. Mount tension bar to the middle position spring claw and pull over tone block letting it rest on the right and left arms mounted to the bottom of the bridge plate. The leather of the tension bar should rest on small pieces of leather on the right and left arms.
22. The tone block spring should only be mounted after the low e, a, d and g strings have been put on.
23. Before stringing instrument, check all other components of guitar. Make sure:
 - a. All neck bolts are tight
 - b. Neck is straight
 - c. Tuning gear are tight – top nut, screw (if any) on back and button
 - d. Check nut – we recommend Graphtech nut material. However, high percentage graphite, bone and other materials work well. Inexpensive nut material tends to not work as good and may cause tuning problems. Most roller nuts will work fine.
 - e. String trees –If the headstock angle is not enough to pull the strings down snug, you will have to use a string tree. If you must use a string tree, we also recommend Graphtech trees.
24. String guitar, loading strings up through tone block. Be sure each string comes out between the proper saddles. Put low 'e' and high 'e' string on first. Then continue with a,d,g and b strings.